

Basic principles

± 10 degrees

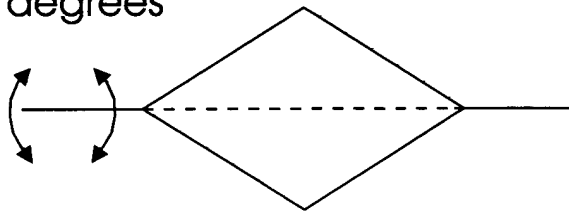


Fig. 1

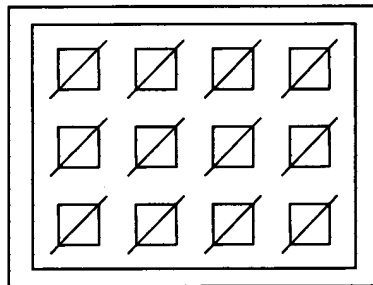


Fig. 2

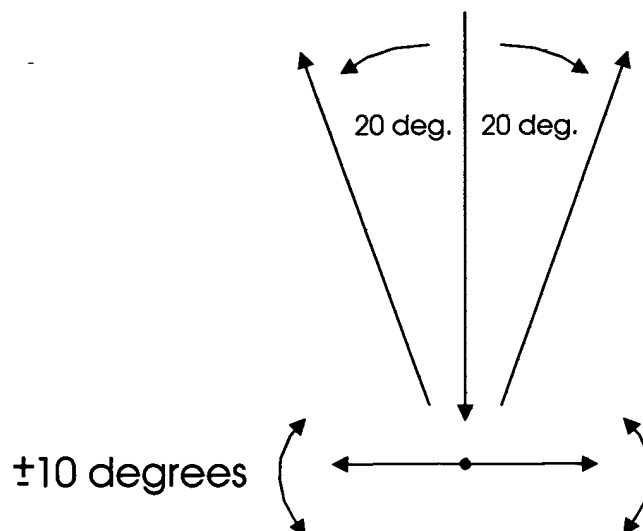


Fig. 3

Figure 1 consists of 15 small plots arranged in a grid. The first 10 plots show the relationship between the probability of a child being in a household with a child and various variables: (a) Age, (b) Sex, (c) Race, (d) Religion, (e) Education, (f) Income, (g) Employment, (h) Health, (i) Marital Status, and (j) Family Size. The next 5 plots show the relationship between the probability of a child being in a household with a child and various variables: (k) Age, (l) Sex, (m) Race, (n) Religion, and (o) Education. The plots are labeled with their respective variables and the probability of a child being in a household with a child.



Mirror HMD - Single Stage

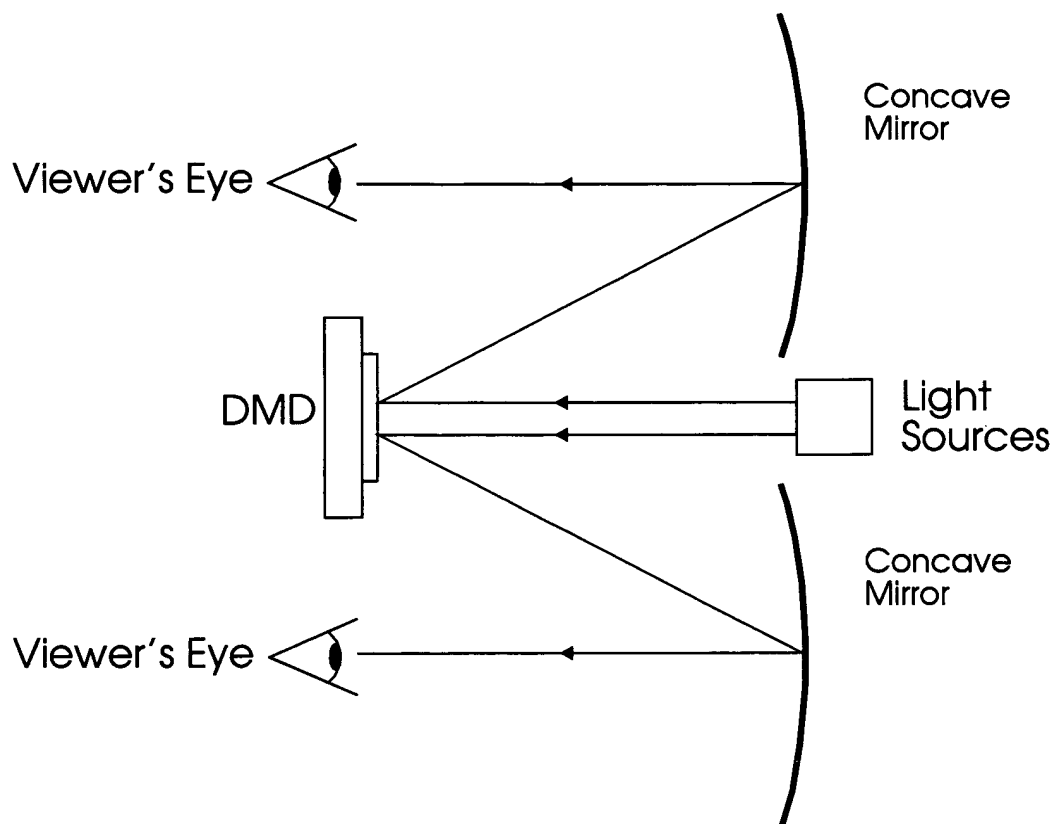


Fig. 7

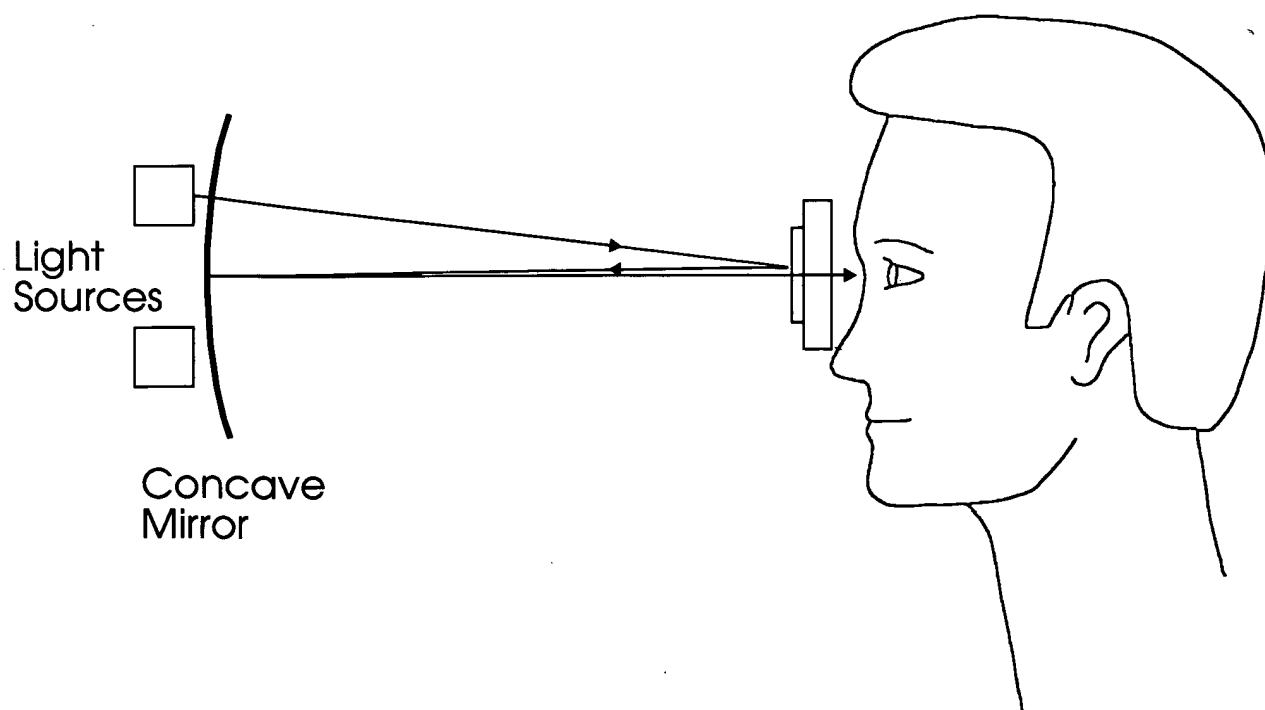


Fig. 8

Mirror HMD - Two Stage

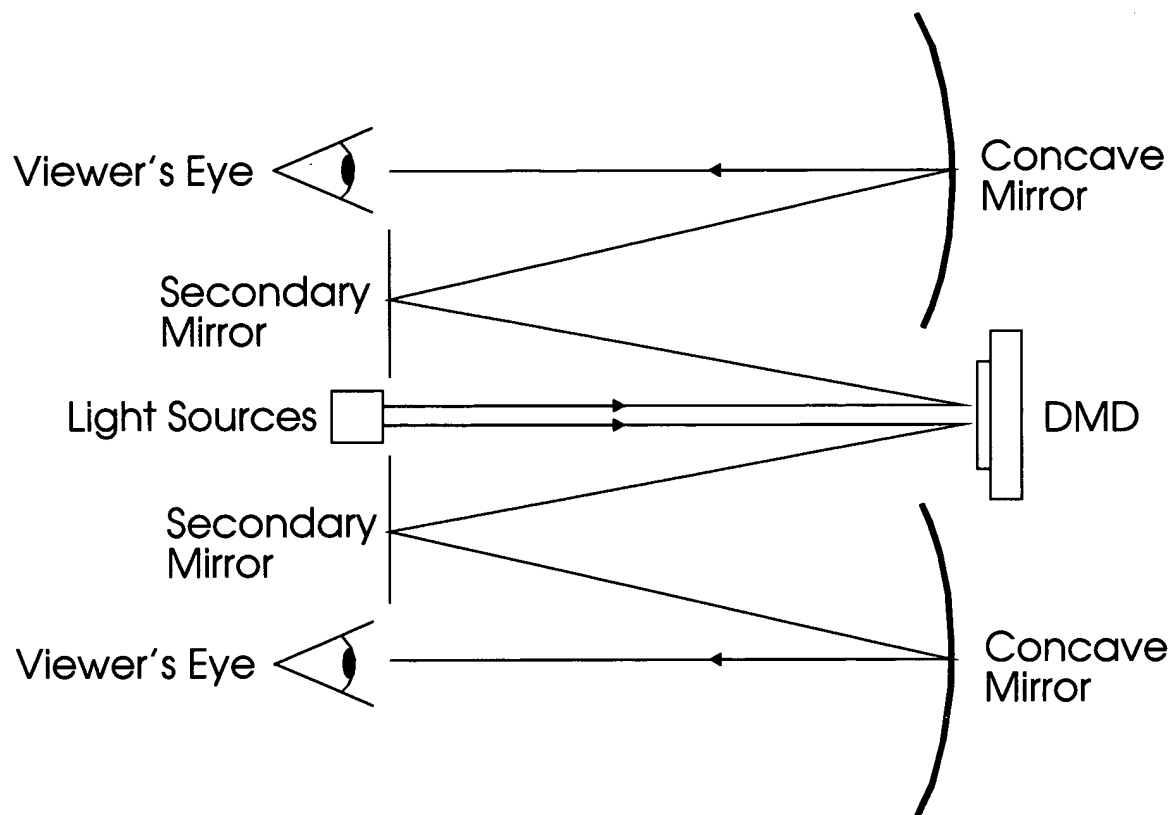


Fig. 9

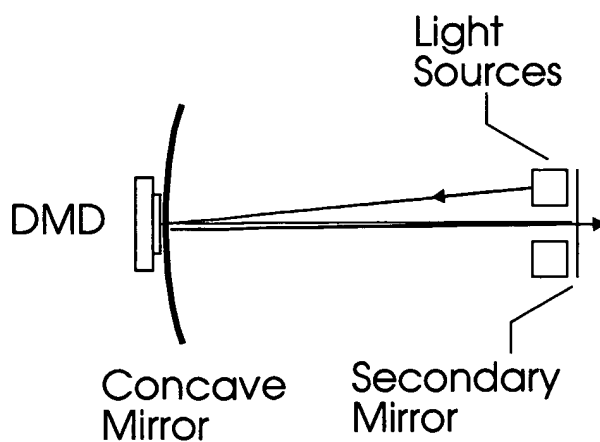


Fig. 10

Table 1. Demographic characteristics of the study population	
Age (years)	50.0 ± 10.0
Gender	
Male	50.0%
Female	50.0%
Education (years)	12.0 ± 2.0
Marital status	
Married	80.0%
Single	20.0%
Occupation	
Professional	30.0%
Managerial	20.0%
Technical	10.0%
Service	20.0%
Unemployed	20.0%
Income (USD/month)	1,500.0 ± 500.0
Health status	
Good	70.0%
Fair	20.0%
Poor	10.0%
Smoking status	
Smoker	30.0%
Non-smoker	70.0%
Alcohol consumption	
Regular	10.0%
Occasional	20.0%
Never	70.0%
Family size	3.0 ± 1.0
Number of children	2.0 ± 1.0
Number of grandchildren	1.0 ± 1.0
Number of siblings	2.0 ± 1.0
Number of nephews/nieces	1.0 ± 1.0
Number of friends	5.0 ± 2.0
Number of pets	1.0 ± 1.0
Number of hobbies	2.0 ± 1.0
Number of religious activities	1.0 ± 1.0
Number of volunteer activities	1.0 ± 1.0
Number of community activities	1.0 ± 1.0
Number of social activities	1.0 ± 1.0
Number of cultural activities	1.0 ± 1.0
Number of sports activities	1.0 ± 1.0
Number of travel activities	1.0 ± 1.0
Number of shopping activities	1.0 ± 1.0
Number of dining activities	1.0 ± 1.0
Number of entertainment activities	1.0 ± 1.0
Number of leisure activities	1.0 ± 1.0
Number of relaxation activities	1.0 ± 1.0
Number of sleep activities	1.0 ± 1.0
Number of eating activities	1.0 ± 1.0
Number of drinking activities	1.0 ± 1.0
Number of smoking activities	1.0 ± 1.0
Number of alcohol activities	1.0 ± 1.0
Number of family activities	1.0 ± 1.0
Number of community activities	1.0 ± 1.0
Number of social activities	1.0 ± 1.0
Number of cultural activities	1.0 ± 1.0
Number of sports activities	1.0 ± 1.0
Number of travel activities	1.0 ± 1.0
Number of shopping activities	1.0 ± 1.0
Number of dining activities	1.0 ± 1.0
Number of entertainment activities	1.0 ± 1.0
Number of leisure activities	1.0 ± 1.0
Number of relaxation activities	1.0 ± 1.0
Number of sleep activities	1.0 ± 1.0
Number of eating activities	1.0 ± 1.0
Number of drinking activities	1.0 ± 1.0
Number of smoking activities	1.0 ± 1.0
Number of alcohol activities	1.0 ± 1.0
Number of family activities	1.0 ± 1.0
Number of community activities	1.0 ± 1.0
Number of social activities	1.0 ± 1.0
Number of cultural activities	1.0 ± 1.0
Number of sports activities	1.0 ± 1.0
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Number of dining activities	1.0 ± 1.0
Number of entertainment activities	1.0 ± 1.0
Number of leisure activities	1.0 ± 1.0
Number of relaxation activities	1.0 ± 1.0
Number of sleep activities	1.0 ± 1.0
Number of eating activities	1.0 ± 1.0
Number of drinking activities	1.0 ± 1.0
Number of smoking activities	1.0 ± 1.0
Number of alcohol activities	1.0 ± 1.0
Number of family activities	1.0 ± 1.0
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Number of social activities	1.0 ± 1.0
Number of cultural activities	1.0 ± 1.0
Number of sports activities	1.0 ± 1.0
Number of travel activities	1.0 ± 1.0
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Number of family activities	1.0 ± 1.0
Number of community activities	1.0 ± 1.0
Number of social activities	1.0 ± 1.0
Number of cultural activities	1.0 ± 1.0
Number of sports activities	1.0 ± 1.0
Number of travel activities	



Enhancements

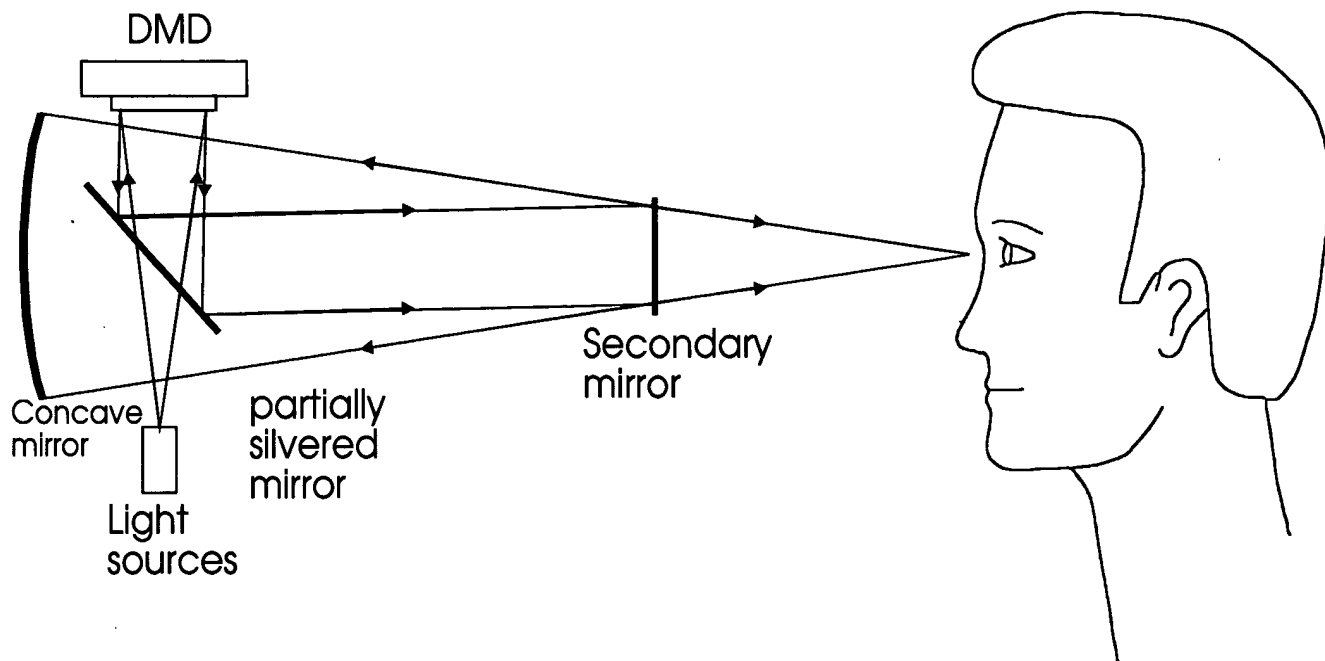


Fig. 13

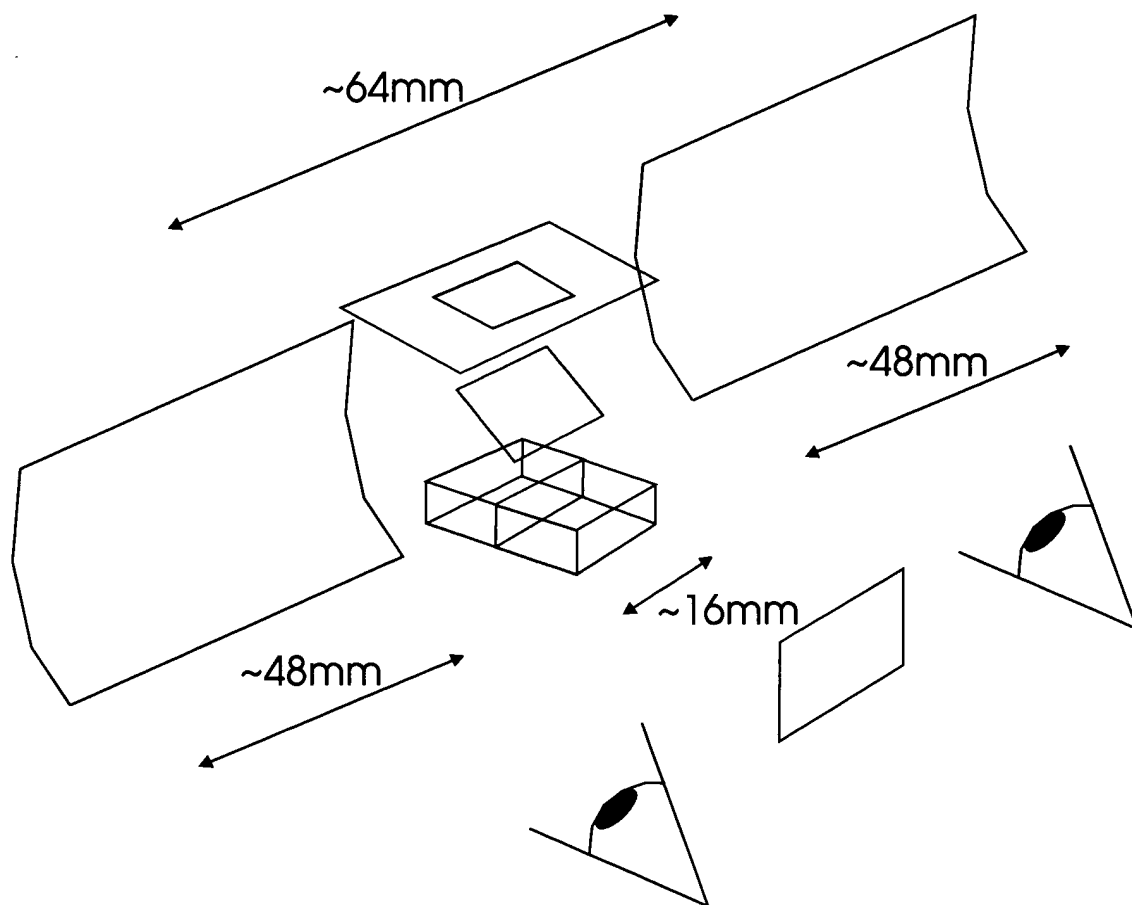
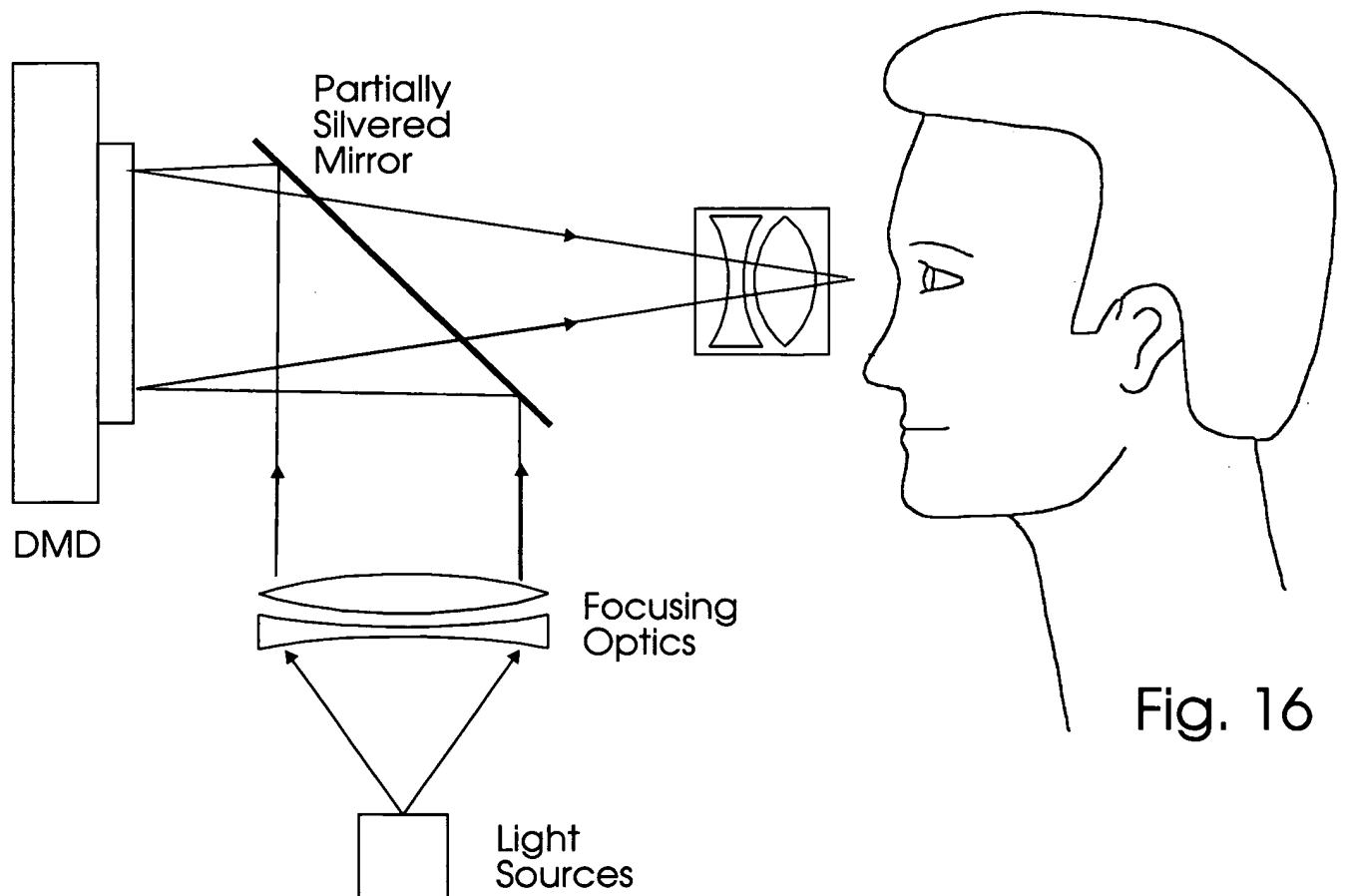
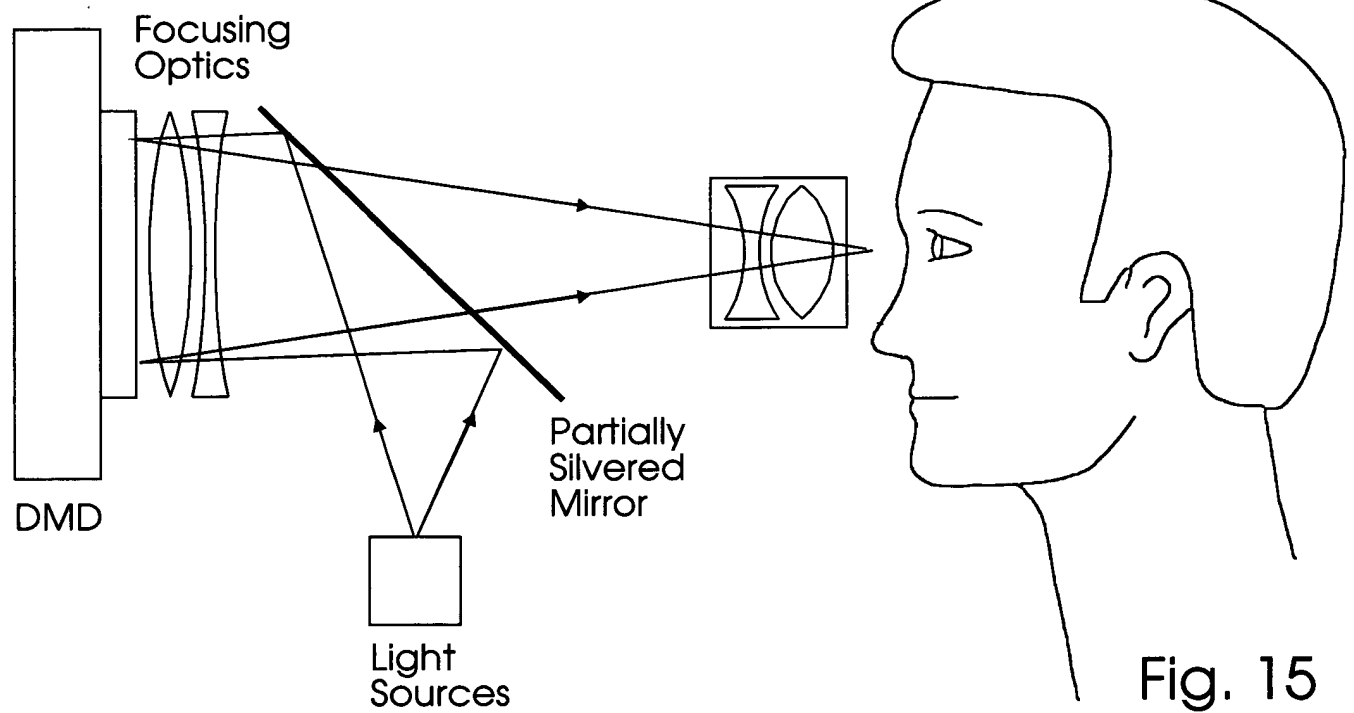


Fig. 14

Dual DMD lens system



2 stage dual mirror hybrid HMD

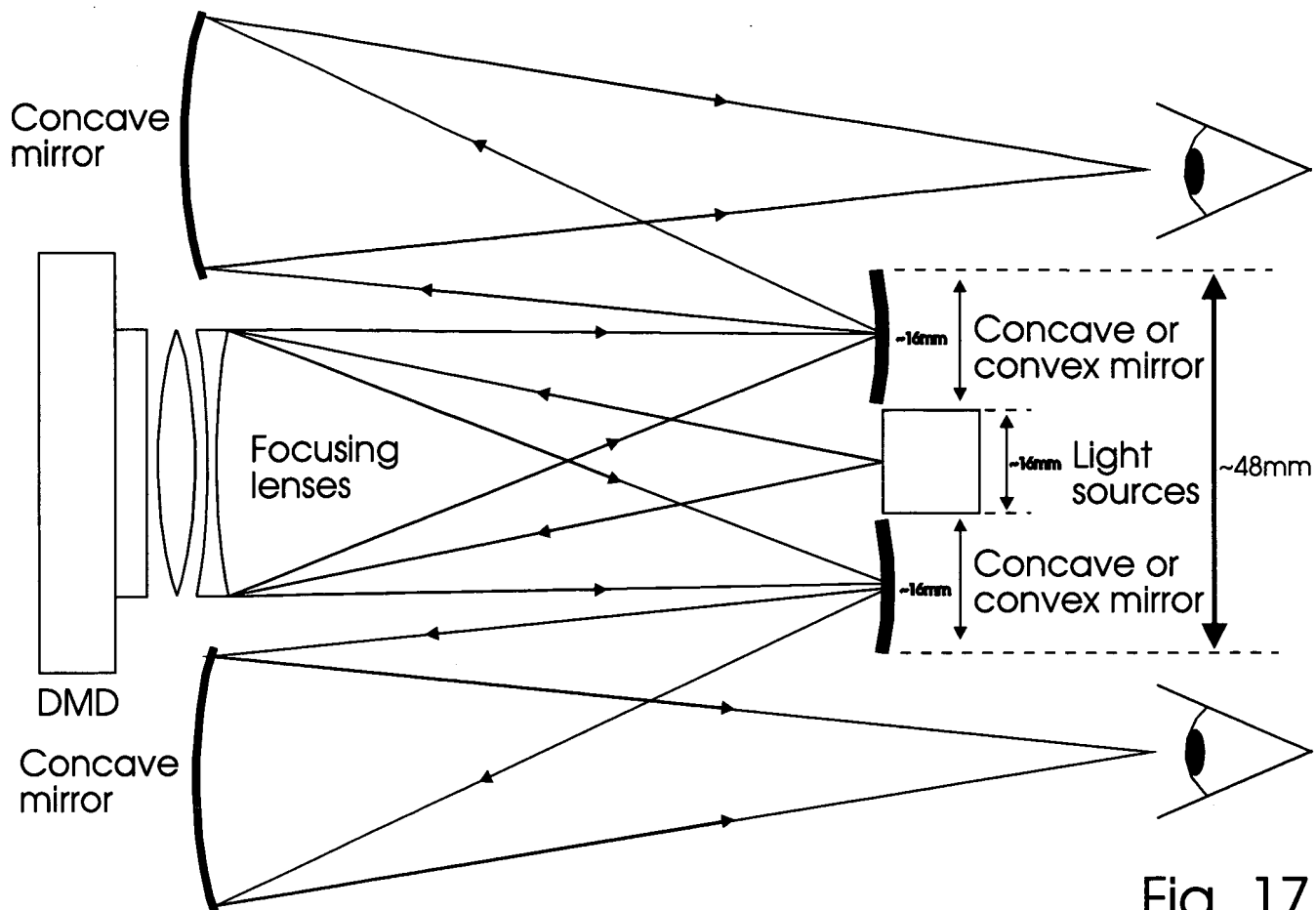


Fig. 17

Single DMD lens HMD

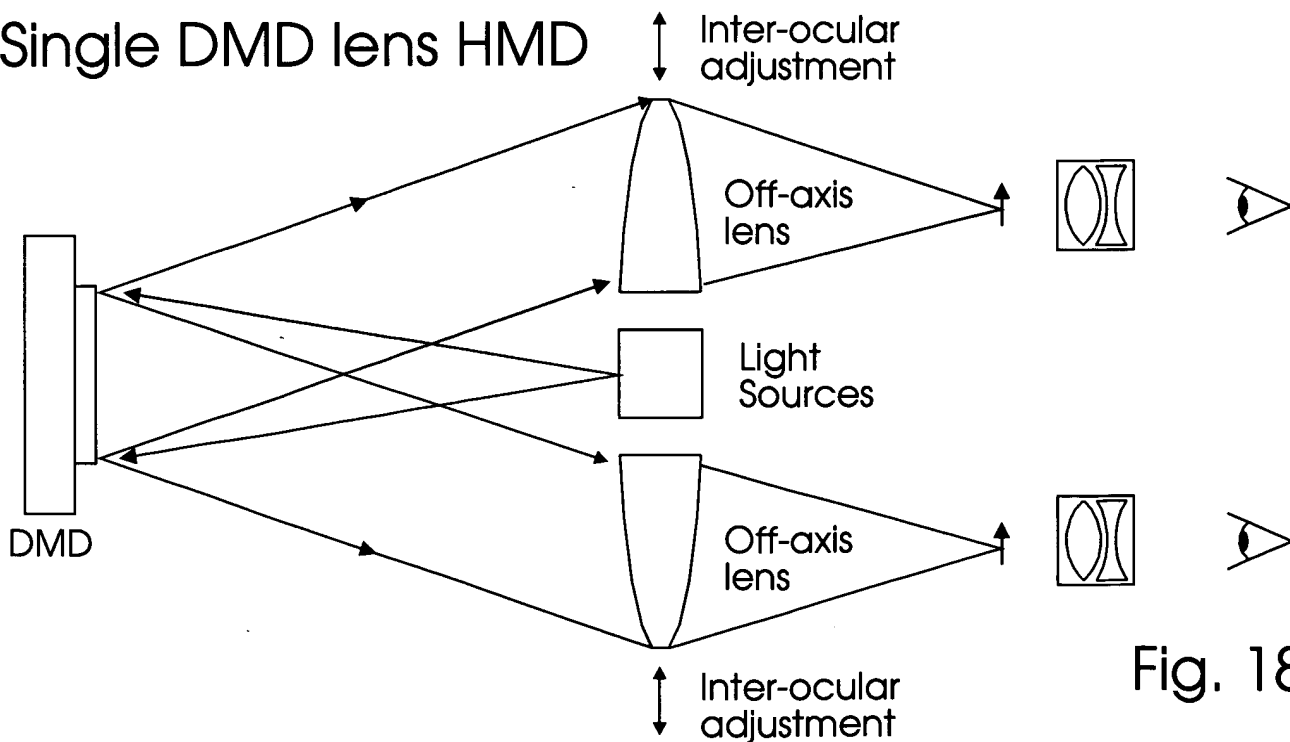


Fig. 18

Prismatic lens design

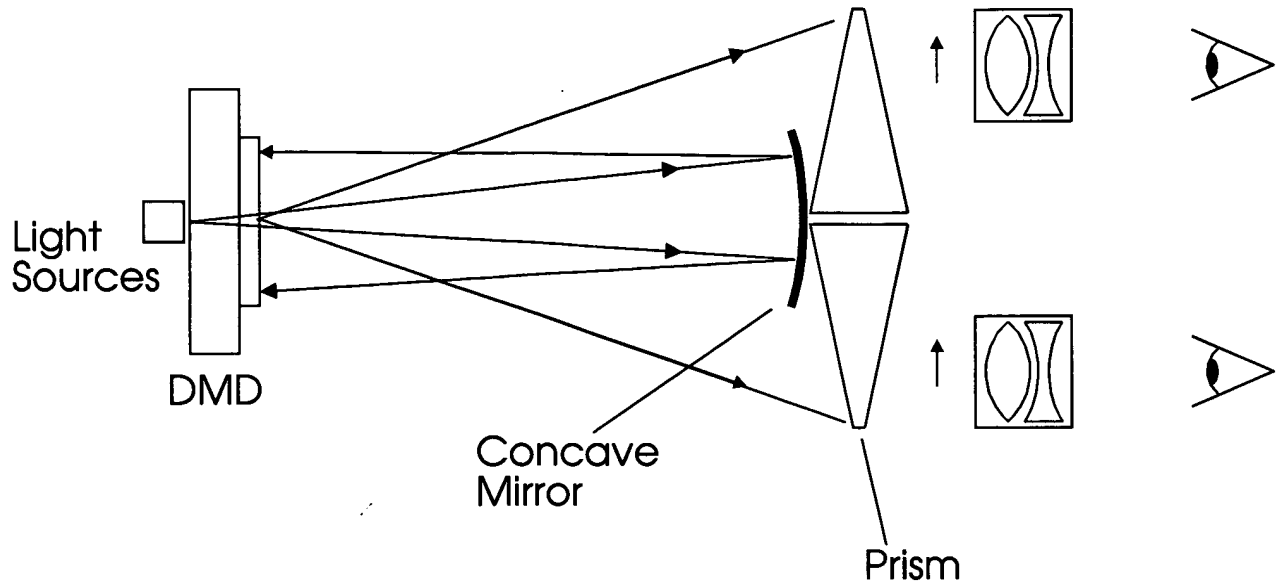


Fig. 19

Binocular lens design

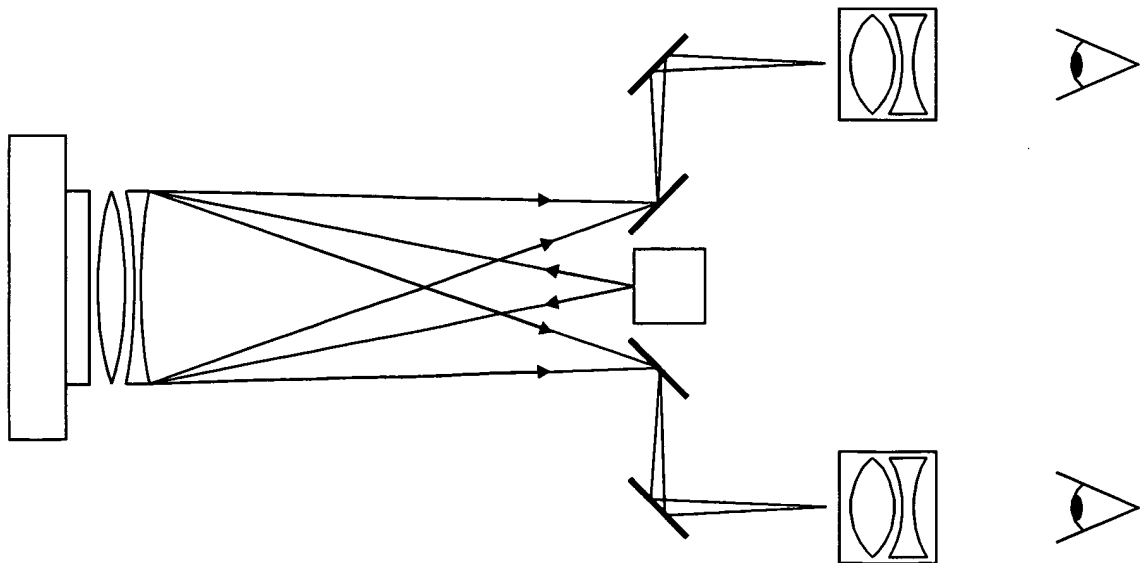


Fig. 20

Single stage hybrid lens system

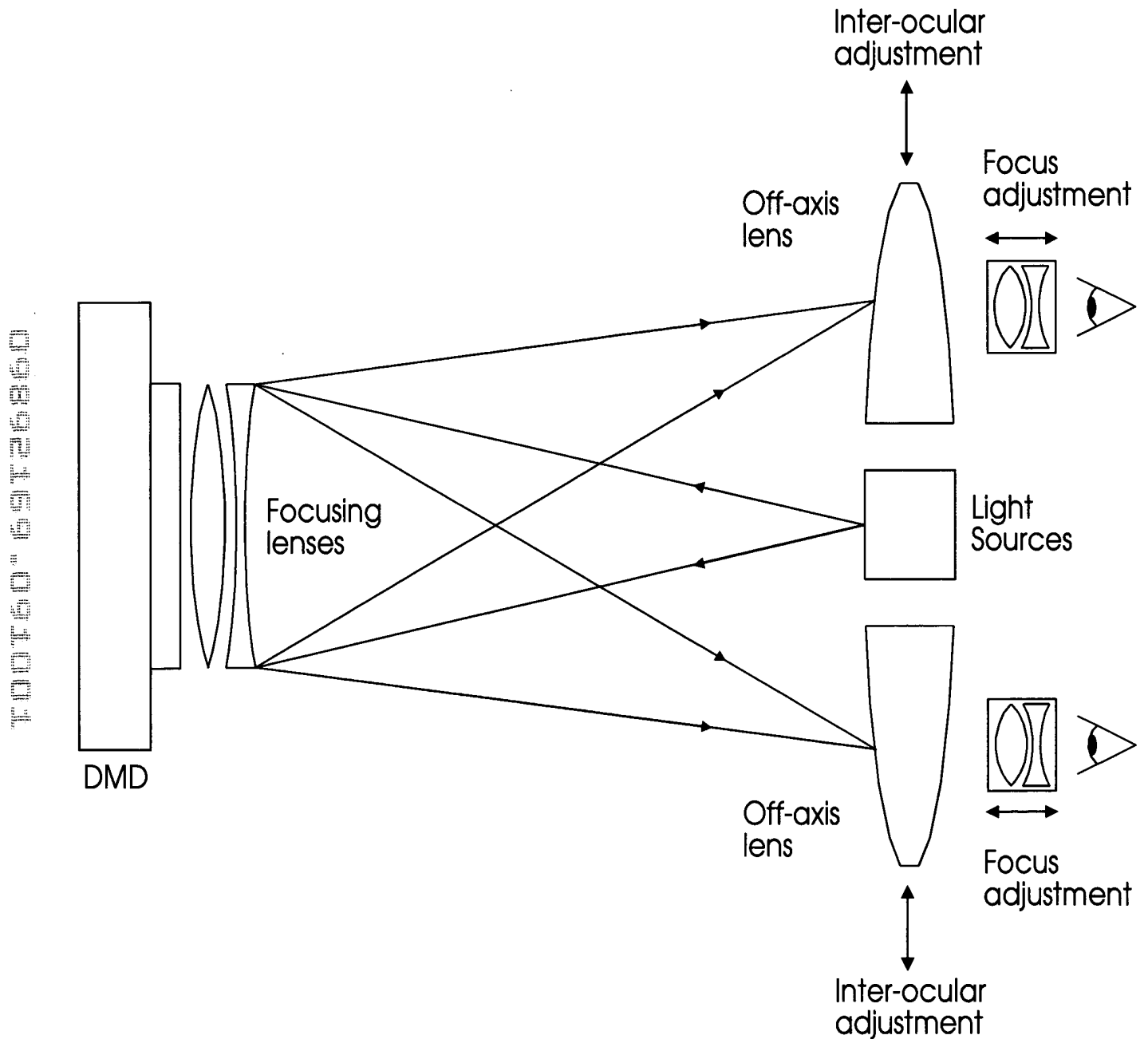


Fig. 21

2 stage hybrid lens system (preferred embodiment)

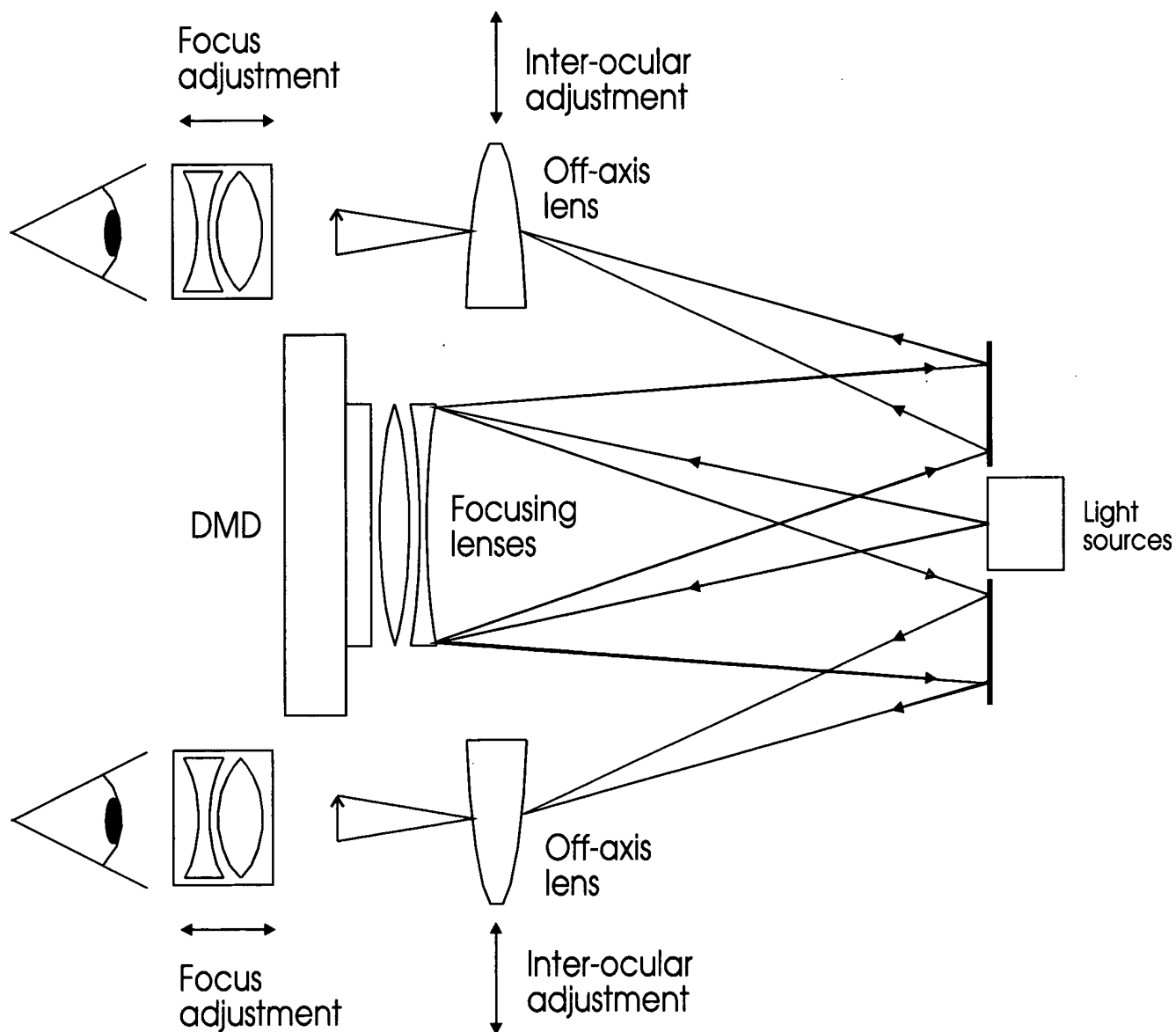


Fig. 22

Lens HMD enhancements

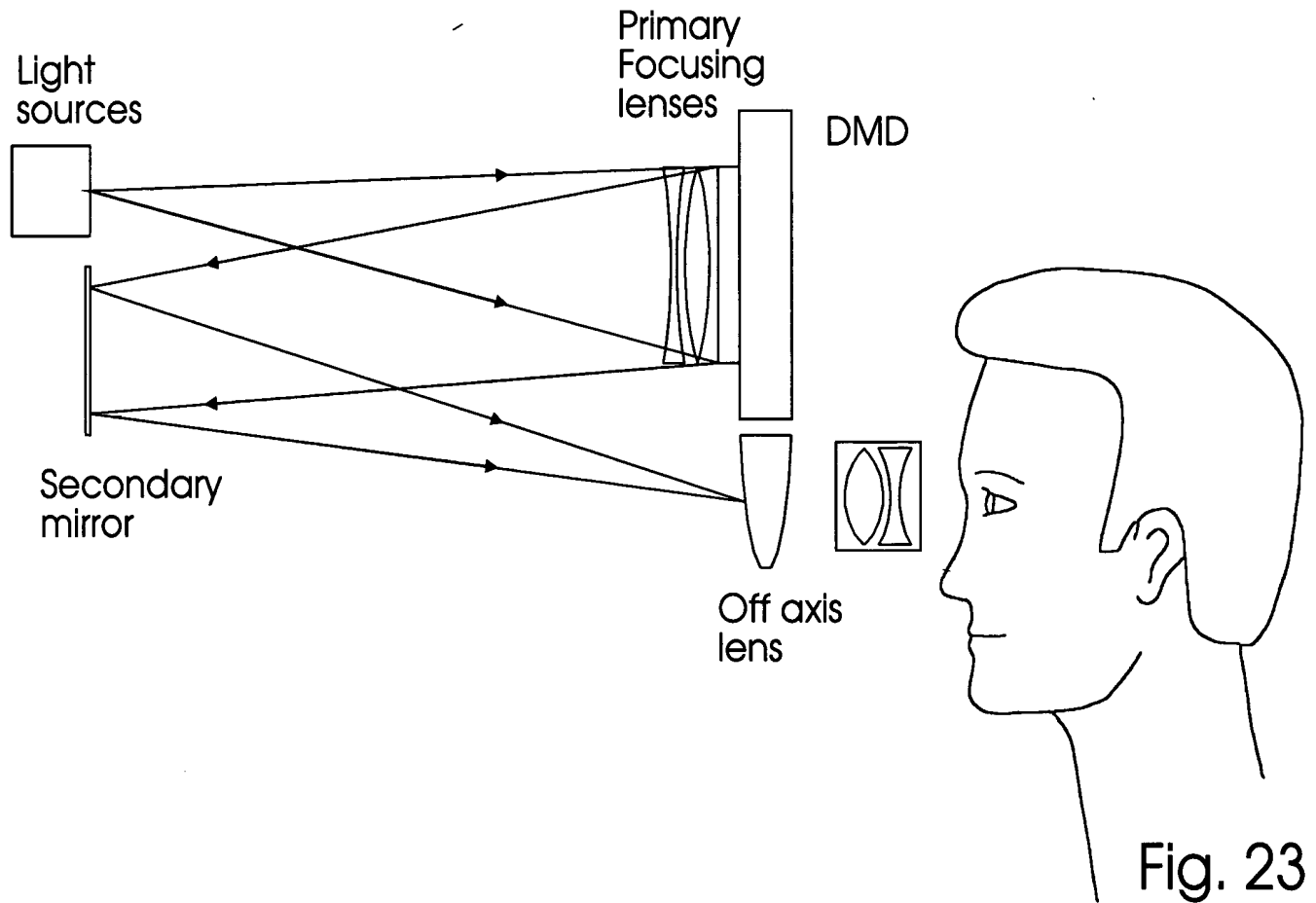


Fig. 23

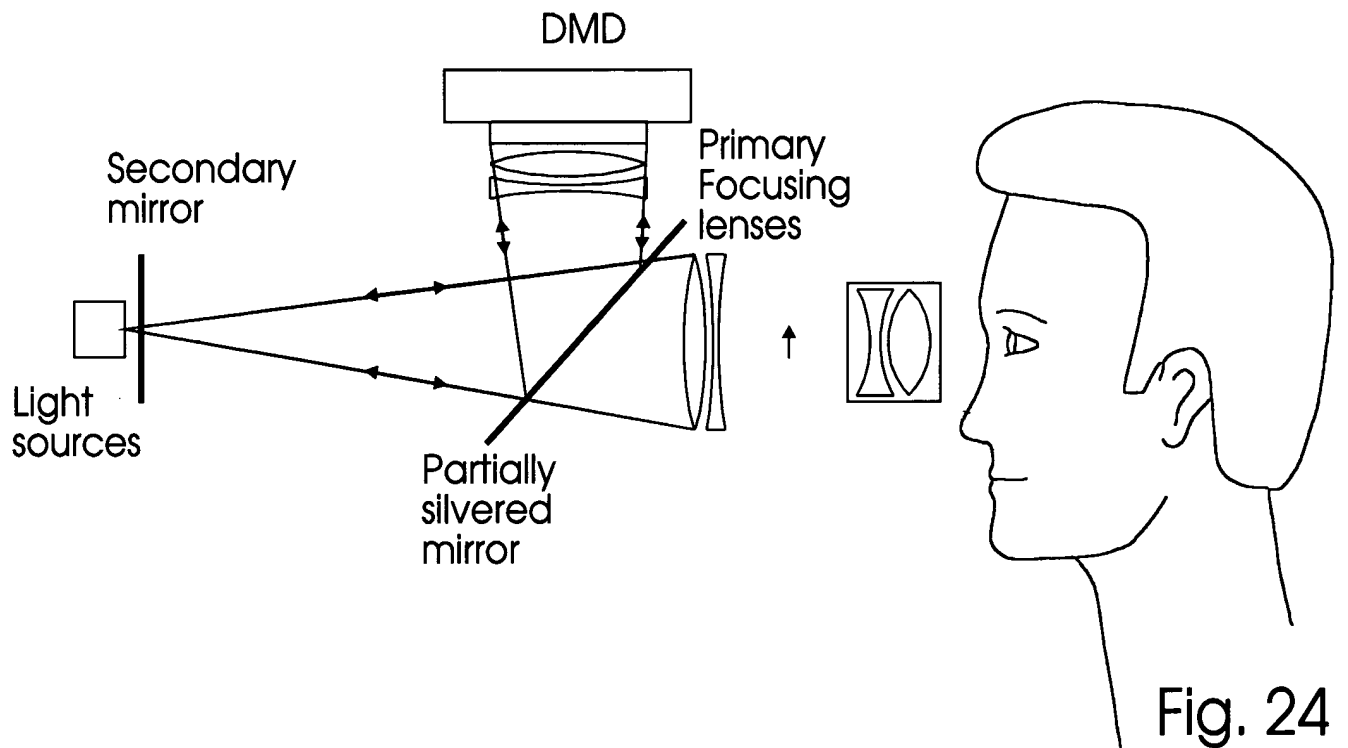
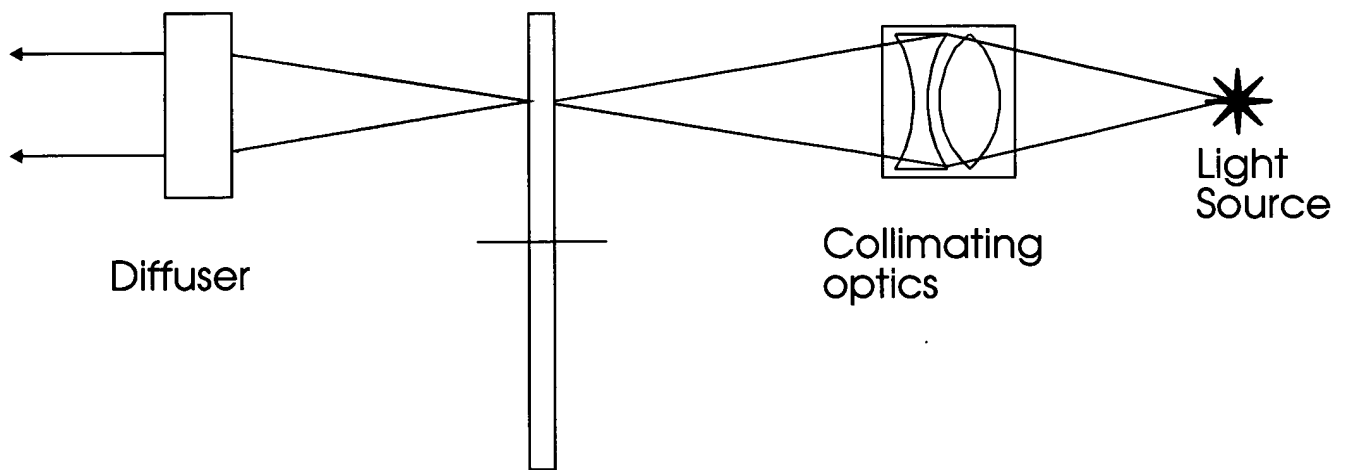
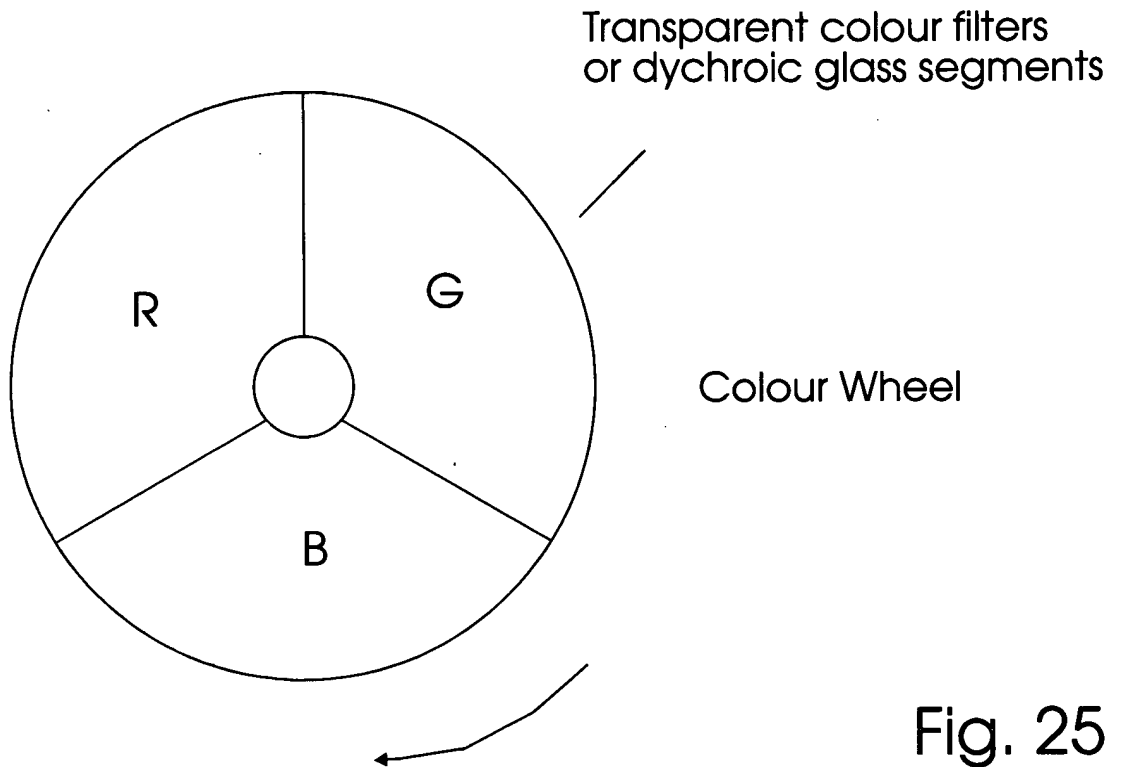


Fig. 24

Light sources



Light sources

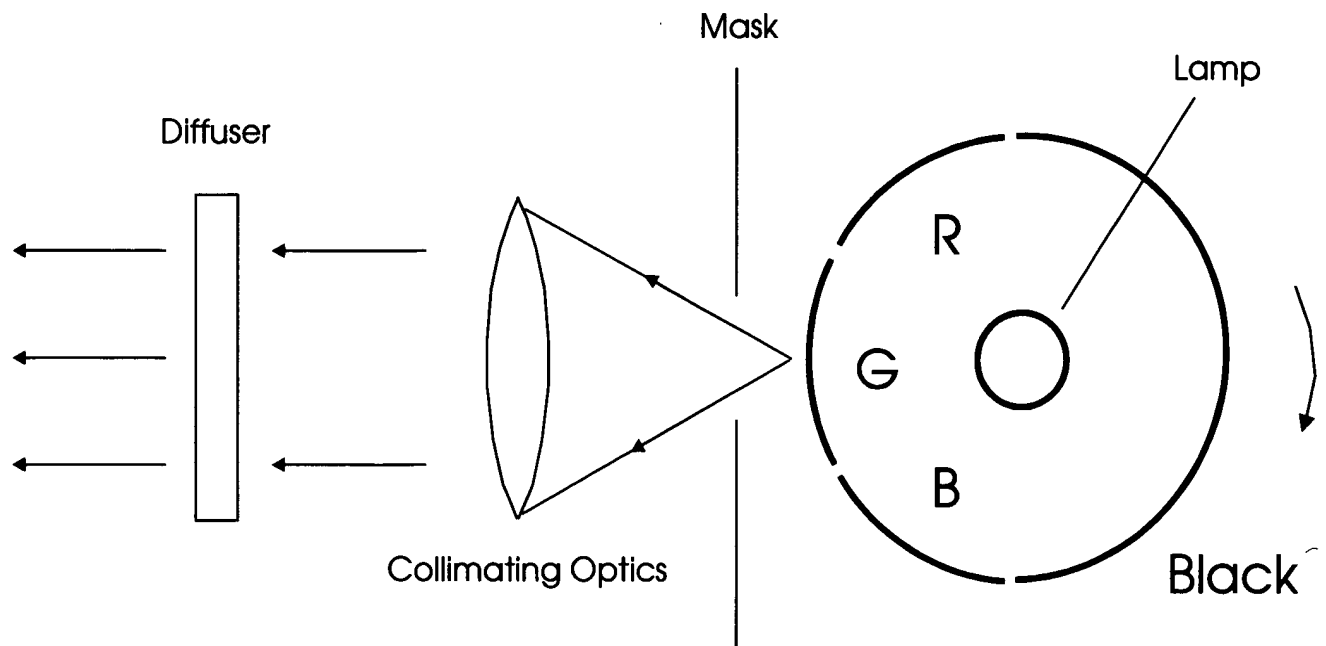


Fig. 27

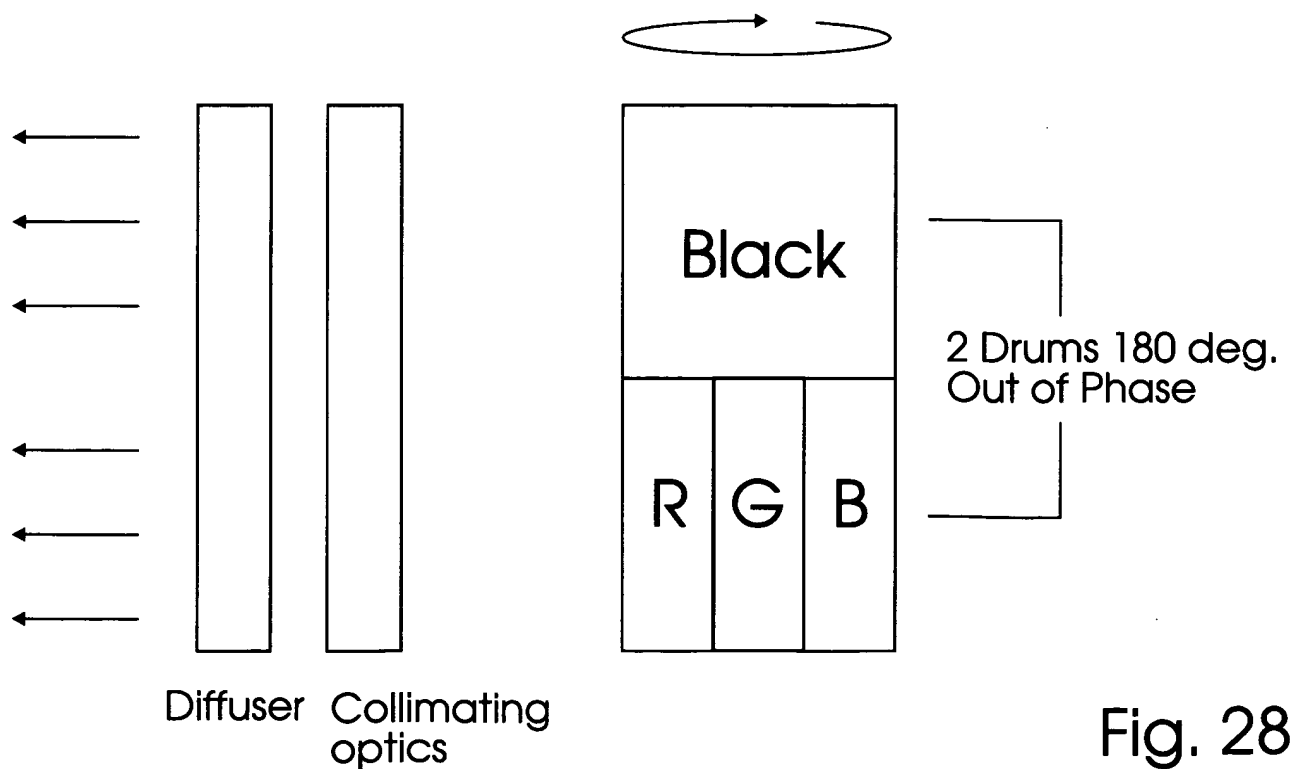


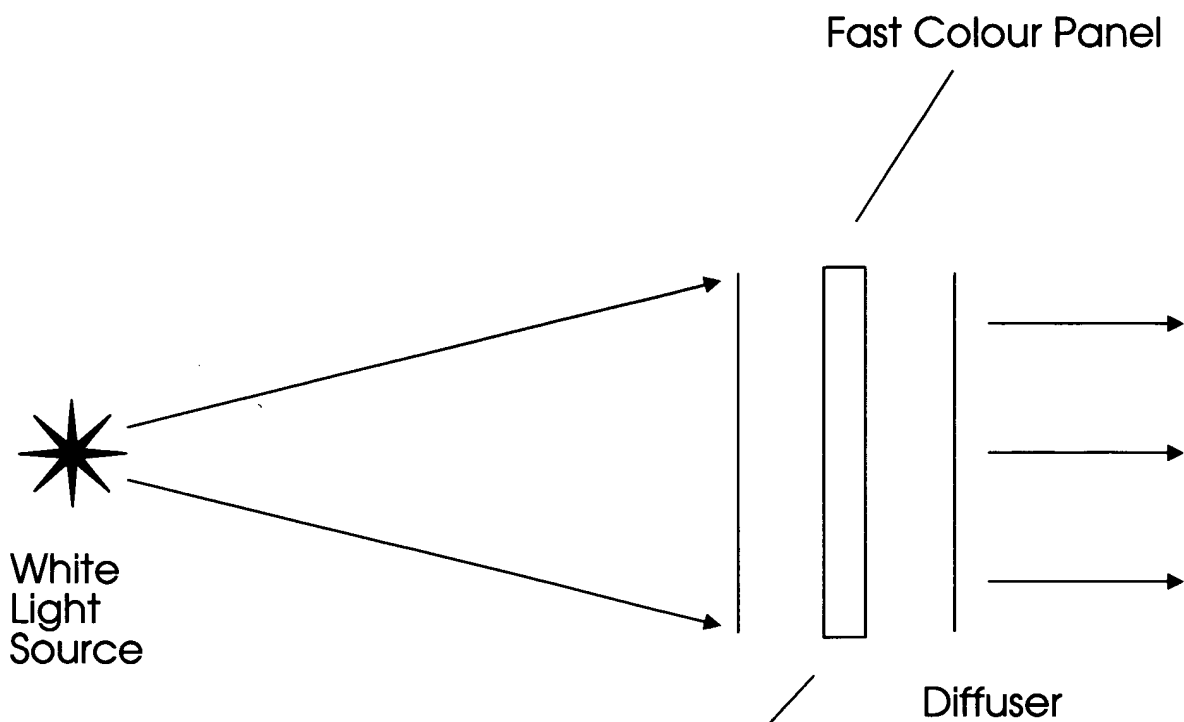
Fig. 28

Table 1. Demographic characteristics of the study population	
Age (years)	50.0 ± 10.0
Gender	
Male	50.0
Female	50.0
Education (years)	12.0 ± 2.0
Marital status	
Married	50.0
Single	50.0
Occupation	
Professional	50.0
Managerial	50.0
Technical	50.0
Skilled	50.0
Unskilled	50.0
Retired	50.0
Income (USD/month)	1,500.0 ± 500.0
Health status	
Good	50.0
Fair	50.0
Poor	50.0
Smoking status	
Smoker	50.0
Non-smoker	50.0
Alcohol consumption	
Regular	50.0
Occasional	50.0
Never	50.0
Family size	3.0 ± 1.0
Number of children	2.0 ± 1.0
Number of grandchildren	1.0 ± 1.0
Number of siblings	2.0 ± 1.0
Number of nephews/nieces	1.0 ± 1.0
Number of friends	5.0 ± 2.0
Number of pets	1.0 ± 1.0
Number of hobbies	2.0 ± 1.0
Number of religious activities	1.0 ± 1.0
Number of volunteer activities	1.0 ± 1.0
Number of community activities	1.0 ± 1.0
Number of social activities	1.0 ± 1.0
Number of leisure activities	1.0 ± 1.0
Number of work activities	1.0 ± 1.0
Number of household activities	1.0 ± 1.0
Number of personal activities	1.0 ± 1.0
Number of professional activities	1.0 ± 1.0
Number of managerial activities	1.0 ± 1.0
Number of technical activities	1.0 ± 1.0
Number of skilled activities	1.0 ± 1.0
Number of unskilled activities	1.0 ± 1.0
Number of retired activities	1.0 ± 1.0
Number of income activities	1.0 ± 1.0
Number of health activities	1.0 ± 1.0
Number of smoking activities	1.0 ± 1.0
Number of alcohol activities	1.0 ± 1.0
Number of family activities	1.0 ± 1.0
Number of education activities	1.0 ± 1.0
Number of marital activities	1.0 ± 1.0
Number of occupation activities	1.0 ± 1.0
Number of income activities	1.0 ± 1.0
Number of health activities	1.0 ± 1.0
Number of smoking activities	1.0 ± 1.0
Number of alcohol activities	1.0 ± 1.0
Number of family activities	1.0 ± 1.0
Number of education activities	1.0 ± 1.0
Number of marital activities	1.0 ± 1.0
Number of occupation activities	1.0 ± 1.0
Number of income activities	1.0 ± 1.0
Number of health activities	1.0 ± 1.0
Number of smoking activities	1.0 ± 1.0
Number of alcohol activities	1.0 ± 1.0
Number of family activities	1.0 ± 1.0
Number of education activities	1.0 ± 1.0
Number of marital activities	1.0 ± 1.0
Number of occupation activities	1.0 ± 1.0
Number of income activities	1.0 ± 1.0
Number of health activities	1.0 ± 1.0
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Number of alcohol activities	1.0 ± 1.0
Number of family activities	1.0 ± 1.0
Number of education activities	1.0 ± 1.0
Number of marital activities	1.0 ± 1.0
Number of occupation activities	1.0 ± 1.0
Number of income activities	1.0 ± 1.0
Number of health activities	1.0 ± 1.0
Number of smoking activities	1.0 ± 1.0
Number of alcohol activities	1.0 ± 1.0
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Number of marital activities	1.0 ± 1.0
Number of occupation activities	1.0 ± 1.0
Number of income activities	1.0 ± 1.0
Number of health activities	1.0 ± 1.0
Number of smoking activities	1.0 ± 1.0
Number of alcohol activities	1.0 ± 1.0
Number of family activities	1.0 ± 1.0
Number of education activities	1.0 ± 1.0
Number of marital activities	1.0 ± 1.0
Number of occupation activities	1.0 ± 1.0
Number of income activities	1.0 ± 1.0
Number of health activities	1.0 ± 1.0
Number of smoking activities	1.0 ± 1.0
Number of alcohol activities	1.0 ± 1.0
Number of family activities	1.0 ± 1.0
Number of education activities	1.0 ± 1.0
Number of marital activities	1.0 ± 1.0
Number of occupation activities	1.0 ± 1.0
Number of income activities	1.0 ± 1.0
Number of health activities	1.0 ± 1.0
Number of smoking activities	1.0 ± 1.0
Number of alcohol activities	1.0 ± 1.0
Number of family activities	1.0 ± 1.0
Number of education activities	1.0 ± 1.0
Number of marital activities	1.0 ± 1.0
Number of occupation activities	1.0 ± 1.0
Number of income activities	1.0 ± 1.0
Number of health activities	1.0 ± 1.0
Number of smoking activities	1.0 ± 1.0
Number of alcohol activities	1.0 ± 1.0
Number of family activities	1.0 ± 1.0
Number of education activities	1.0 ± 1.0
Number of marital activities	1.0 ± 1.0
Number of occupation activities	



Diffuser

Fig. 29



Fresnel Lens

Fig. 30

Light sources

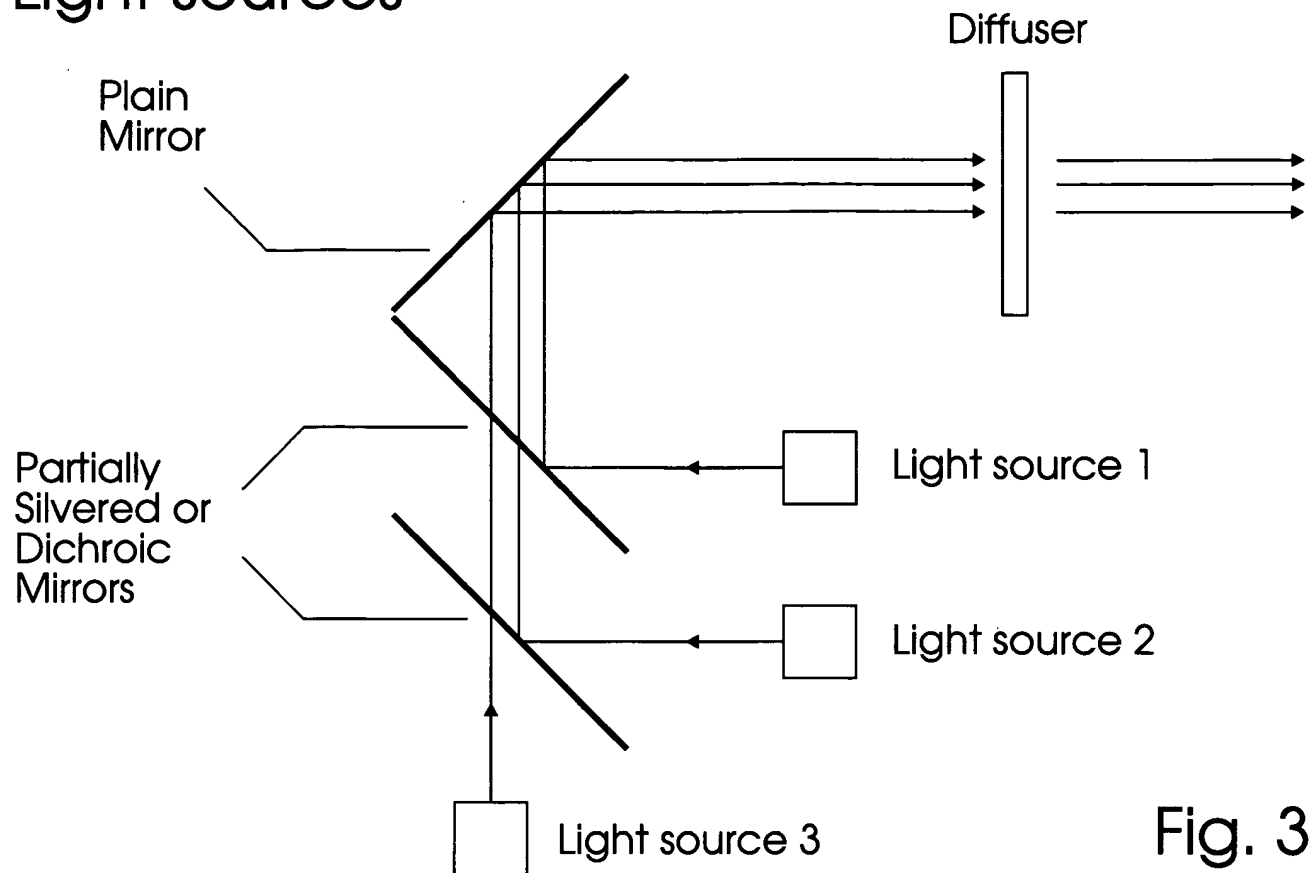


Fig. 31

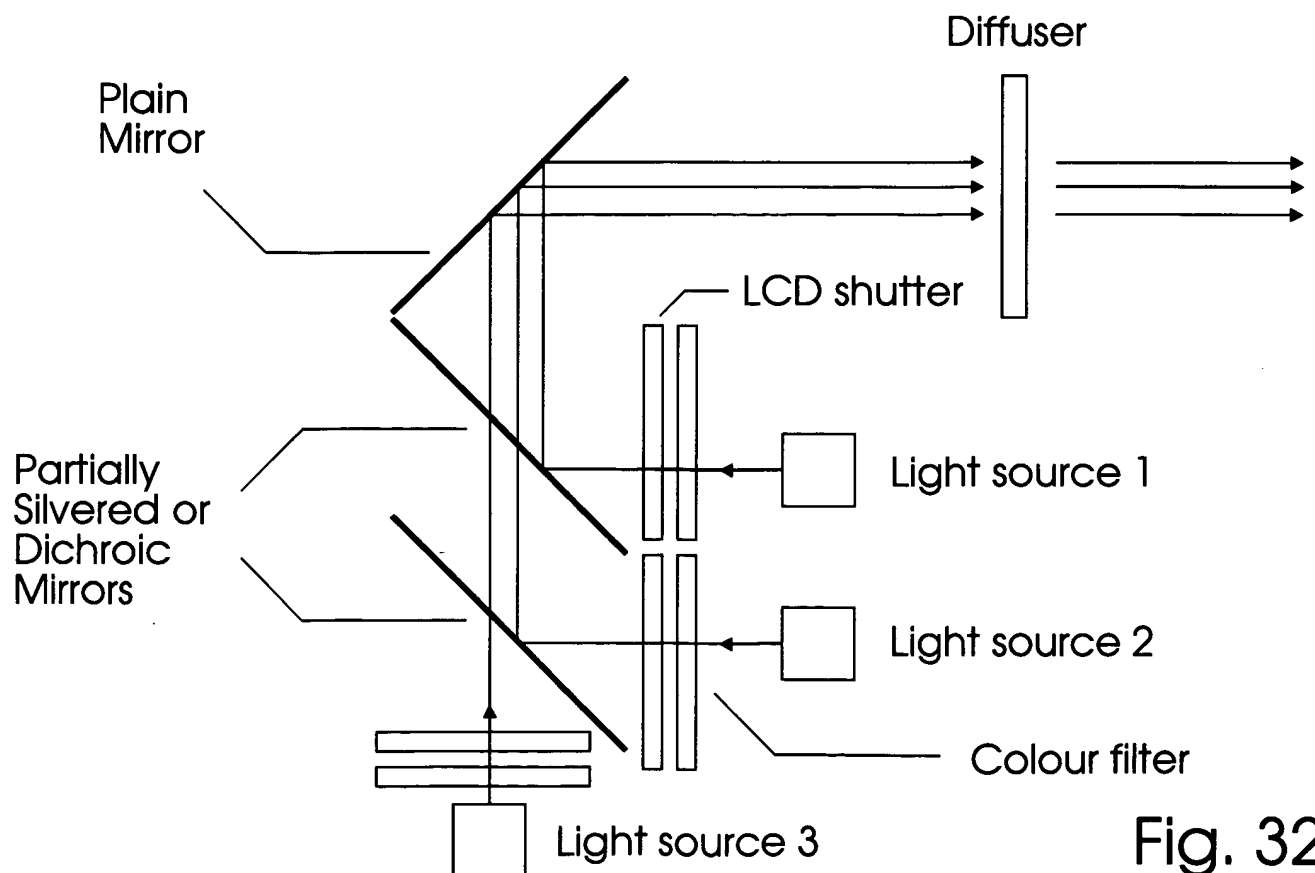
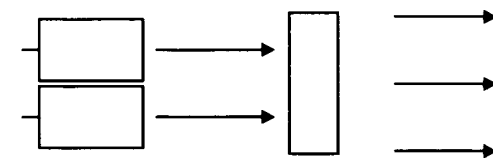
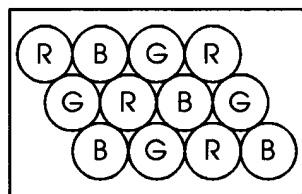


Fig. 32

Light Sources

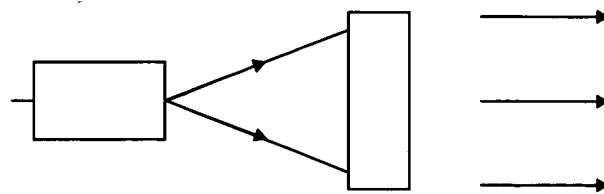
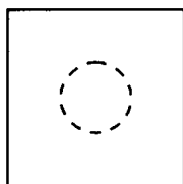
LED Array-1 (Monochrome LEDs)



LED array Diffuser

Fig. 33

LED Array - 2 (Full Spectrum LEDs)



Full spectrum
LED

Diffuser

Fig. 34

Optical enhancements

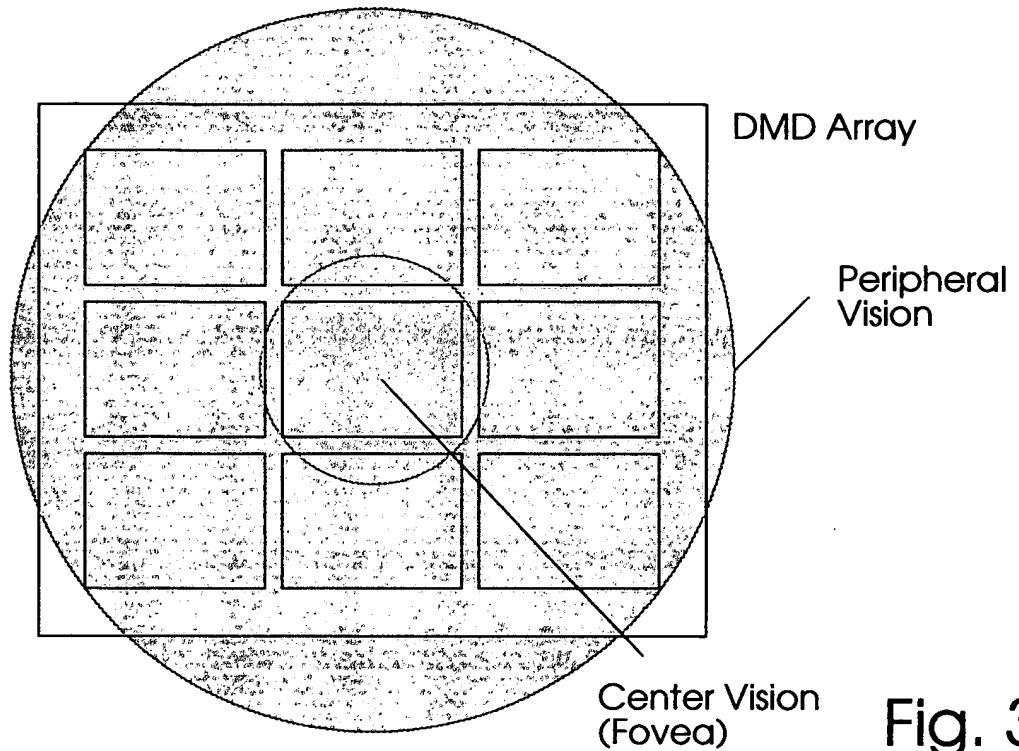


Fig. 35

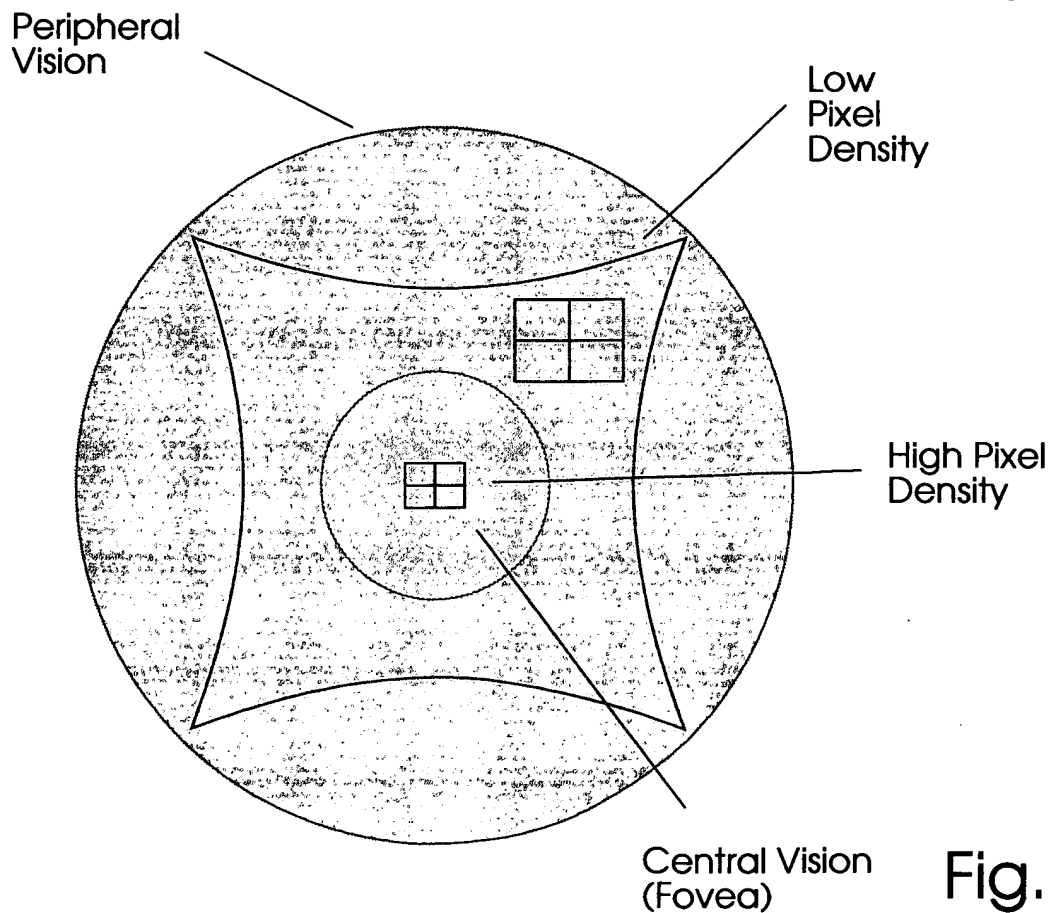


Fig. 36

Colour space comparison

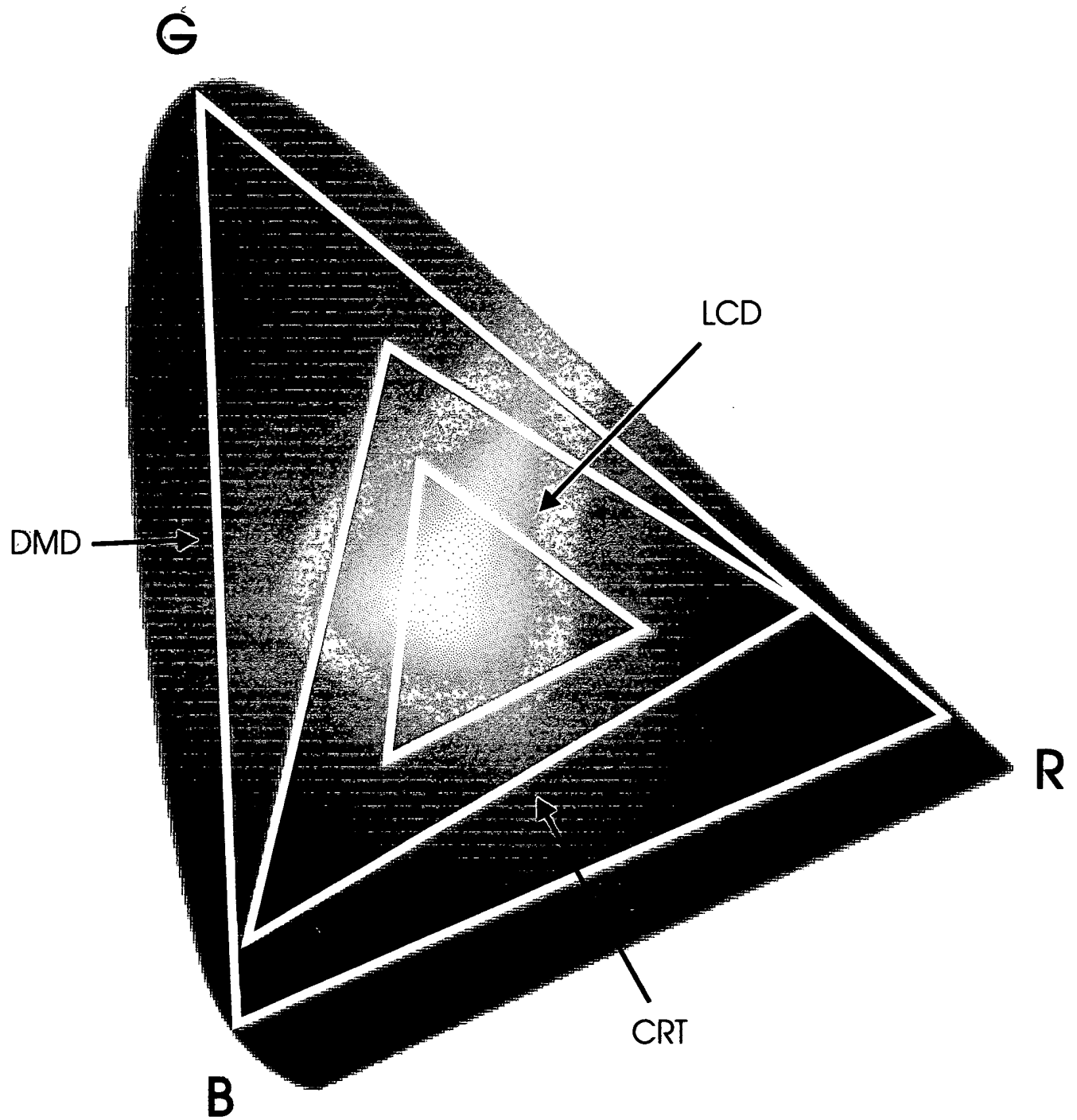


Fig. 37